

Work Order ID 103415

103415

Page 1

June-24-13 1:55:09 PM

Item ID: 647.9411 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Upper Deflector
 Start Date: 6/24/13 Start Qty: 50.00 *50* Cust Item ID:
 Required Date: 7/12/13 Req'd Qty: 50.00 *50* Customer:
 Reference:

Approvals: Process Plan: MLJ Date: 1306-24 Tooling: _____ Date: _____
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____
 Run Start *NR1*
 Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
647.9400	A

100
 100 13/06/27 BAND SAW 0.00
 Bandsaw Memo 0.00
 Jeaspa Bandsaw Cut Blank at 32.625"
 *** ONE BLANK MAKES TWO PARTS***

DAS 40 13/08/06
9-8
mf 13/08/18
50

110
 110 HAAS CNC VERTICAL MACHINING #1 0.00
 HAAS 1 Memo 0.00
 HAAS CNC vertical machine #1 1-Machine per folio FB196
 DWG REV: A
 FOLIO REV: A4
 2- deburr and break all sharp edges

DAS 40 13/08/19
9-8
mf 13/08/21
50

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td style="width: 33%;"> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </td> <td style="width: 33%;"> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </td> <td style="width: 33%;"> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </td> <td style="width: 33%;"> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </td> </tr> </table>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 103415

103415

Page 2

June-24-13 1:55:09 PM

Item ID: 647.9411

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Upper Deflector

Start Date: 6/24/13

Start Qty: 50.00

50

Cust Item ID:

Required Date: 7/12/13

Req'd Qty: 50.00

50

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run

Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC2- Inspect parts off machine FAI/FAIB

0.00

OK 13/08/19

120

QC

Memo

0.00

50

Quality Control

130

QC8- Inspect parts - second check

0.00

130

QC

Memo

0.00

50

13.08.19

Quality Control

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%; border: none;"> <tr> <td style="width: 33%;"> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </td> <td style="width: 33%;"> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </td> <td style="width: 33%;"> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </td> <td style="width: 33%;"> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </td> </tr> </table>	Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>
Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/>	Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/>	Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/>	Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/>			

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 103415

June-24-13 1:55:09 PM

103415

Page 3

Item ID: 647.9411

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Upper Deflector

Start Date: 6/24/13 Start Qty: 50.00

50

Cust Item ID:

Required Date: 7/12/13 Req'd Qty: 50.00

50

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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140

Outsource process-Anodize per QSI017 4.1.10.1

0.00

140

Outsource4

Memo

0.00

Outsource process - Anodize

Issue P/O to ATG : 21052

1- Black Anodize as per Dwg 647.9400

2- PRIME AS PER DWG, SEE NOTE #7 (***DISREGARD AFTER ASSEMBLY***)

Certification of Comformity is required

CZ 13/08/23 50

150

Receive & Inspect for Damage & Mat'l Certs

0.00

150

Packaging

Memo

0.00

Packaging

13/5/13 (50)
2BXP

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
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Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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Work Order ID 103415

June-24-13 1:55:09 PM

103415

Page 4

Item ID: 647.9411

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Upper Deflector

Start Date: 6/24/13 Start Qty: 50.00

50

Cust Item ID:

Required Date: 7/12/13 Req'd Qty: 50.00

50

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start *NR1*

Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
155	QC5- Inspect part completeness to step on W/O	0.00							
155						SG			
QC	Memo	0.00				can			
Quality Control									
180	Identify as per dwg & Stock Location: <u>composites</u>	0.00							
180									
Packaging	Memo	0.00							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.00							
Quality Control									

SO

nhm 13-12-09

13-12-11

13-12-11

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Suspected Unapproved <input type="checkbox"/>	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube <input type="checkbox"/></td> <td>Crosstube <input type="checkbox"/></td> <td>Water Jet <input type="checkbox"/></td> <td>Engineering <input type="checkbox"/></td> </tr> <tr> <td>Machining <input type="checkbox"/></td> <td>Small Fab <input type="checkbox"/></td> <td>Prod. Eng. Coord. <input type="checkbox"/></td> <td>Quality <input type="checkbox"/></td> </tr> <tr> <td>Thermoforming <input type="checkbox"/></td> <td>Finishing <input type="checkbox"/></td> <td>Rec/Store/Packaging <input type="checkbox"/></td> <td>Other <input type="checkbox"/></td> </tr> <tr> <td>Large Fab <input type="checkbox"/></td> <td>Composite <input type="checkbox"/></td> <td>Supplier <input type="checkbox"/></td> <td></td> </tr> </table>	Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>	Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>	Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>	Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>	
Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other _____ _____ _____
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Picklist Print

June-24-13 1:55:08 PM

Page 1

Work Order ID: 103415
 Parent Item: 647.9411
 Parent Item Name: Upper Deflector

Start Date: 6/24/13
 Start Qty: 50.00
 Required Date: 7/12/13
 Required Qty: 50.00

Comments: IPP REV: A NEW ISSUE JFS 13/06/19 VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M7075T6B5.000X0.375 7075-T6 BAR 5.000" X 0.375"		Purchased	No			100	f	46.8260	1.36	71.578947			

OAS 13/08/06

40
9-89

Location	Loc Qty	Loc Code
MAT049	46.826	
123218	44.362	
123418	2.464	

→ 126930

27'

M 126615 X 45.70

OK 13/08/18

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

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Skid-tube <input type="checkbox"/>	Crosstube <input type="checkbox"/>	Water Jet <input type="checkbox"/>	Engineering <input type="checkbox"/>															
Machining <input type="checkbox"/>	Small Fab <input type="checkbox"/>	Prod. Eng. Coord. <input type="checkbox"/>	Quality <input type="checkbox"/>															
Thermoforming <input type="checkbox"/>	Finishing <input type="checkbox"/>	Rec/Store/Packaging <input type="checkbox"/>	Other <input type="checkbox"/>															
Large Fab <input type="checkbox"/>	Composite <input type="checkbox"/>	Supplier <input type="checkbox"/>																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
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Doc/Data									
Equip/Tooling									
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Operator									
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Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric <input type="checkbox"/> Cracks <input type="checkbox"/> Crimp/Kink/Ripple/Wave <input type="checkbox"/> Cuffs <input type="checkbox"/> Crushing <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Marks/Chatter <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube	General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damage/Defect <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drawing <input type="checkbox"/> Drill Holes <input type="checkbox"/> Finish <input type="checkbox"/> Fit/Function	<input type="checkbox"/> Folio/Program <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete/Unqualified <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Misaligned/off center <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Off-set <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence	<input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Set-up <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other
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APICAL
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 03762

SHEET 1 OF 1

DWG NO. 6479400

REV: A

PREPARED
BY B. PETERS

DATE: 01/07/13

EFFECT ON
☐ INC. ☒ DEC.

DWG TITLE: DEFLECTORS

APPROVED BY: ENGR *[Signature]*

MFG *[Signature]*

QC *[Signature]*

EFF: NEXT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON: REVISED HOLE DIAMETER TO REFLECT PIN DIAMETER IN NEXT ASSY.

TAG	X LOC	Y LOC	SIZE
A1	-8.949	-4.066	Ø .201
A2	-6.172	-3.562	Ø .201
B1	-7.903	-5.121	Ø .253
C1	-5.978	-.267	Ø .165
C2	-3.863	-.267	Ø .165
C3	-1.758	-.267	Ø .165
D1	-5.159	-2.500	Ø .250

IS

UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

10-103415 MJS

1306-27

SHEET 9, ZONE C8 IS:

DOCUMENTS EFFECTED:

☐ RFMS ☐ MDL ☐ INSTALL INSTRUC ☐ ICA ☐ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

DER REVIEW REQUIRED
☐ YES ☒ NO

103415

APICAL
INDUSTRIES, INC.

ENGINEERING CHANGE NOTICE NO. 03739

SHEET 1 OF 1

DWG NO. 6479400

REVISION

PREPARED
BY B. PETERS

DATE: 12/07/13

EFFECT ON DWG
☐ INC. ☒ UNINC.

DWG TITLE: DEFLECTORS

APPROVED BY: ENGR. *[Signature]*

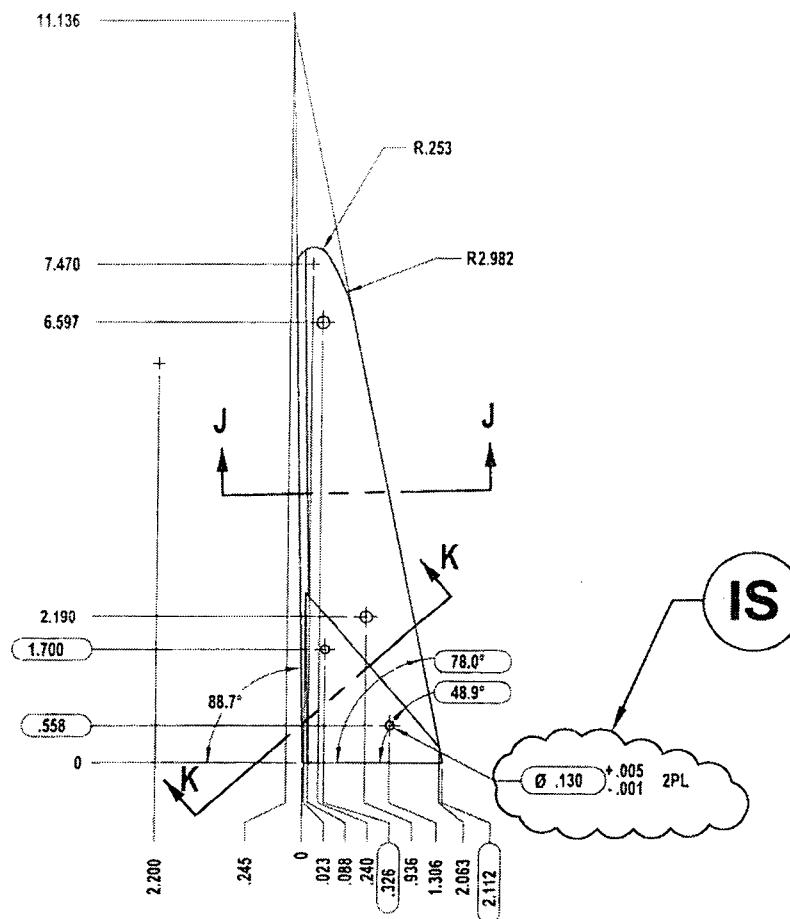
MFG *[Signature]*

QC *[Signature]*

EFFECT: NEXT ORDER

TRANSACTION CODES (TC):
A-ADD C-CREATE
R-REVISE D-DELETE

REASON:
REVISED TOLERANCE ON HOLE DIAMETER TO REFLECT RIVET DIAMETER.



SHEET 8, ZONE D4 IS:

DOCUMENTS EFFECTED:

☐ RFMS ☐ MDL ☐ INSTALL INSTRU ☐ ICA ☐ BOM

CHANGE CATEGORY
☐ MAJOR ☒ MINOR

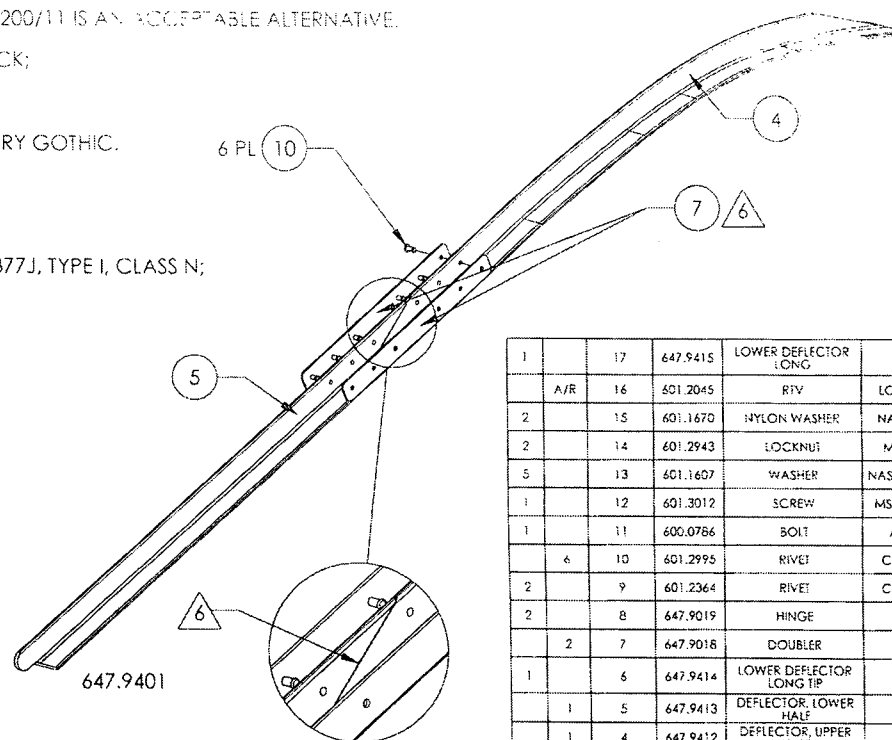
DER REVIEW REQUIRED
☐ YES ☒ NO

NOTES: UNLESS OTHER WAYS ARE SPECIFIED

1. MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250, OR AMS-QQ-A-200/11 IS AN ACCEPTABLE ALTERNATIVE.
2. FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK;
3. DE BURR AND BREAK ALL SHARP EDGES.
4. IDENTIFY IAW MPP-120. LASER ETCH P/N AND REVISION, 12 PT. CENTURY GOTHIC.
5. ALL DIMENSIONS SHOWN PRIOR TO FINISH.
6. APPLY F/N 17 TO FAYING SURFACES.
7. FINISH: PRETREAT PR-148 ADHESION PROMOTER, PRIME IAW MIL-P-23377J, TYPE I, CLASS N; 1-2 MIL MAX. APPLY FINISH AFTER ASSEMBLY.
8. TORQUE 15-20 IN.-LBS.
9. DIMENSION SHOWN IS FOR INSPECTION AFTER FINISHING.
- 6 PL 10

UNINCORPORATED ECN(S)

03739



1	17	647.9415	LOWER DEFLECTOR LONG		
	A/R	16	601.2045	RIV	LOCITE 598
2	15	601.1670	NYLON WASHER	NAS11515H3L	
2	14	601.2943	LOCKNUT	MS21042-3	
5	13	601.1607	WASHER	NAS1149F0332P	
1	12	601.3012	SCREW	MS27039-1-15	
1	11	600.0786	BOIT	AN3C7A	
	6	10	601.2995	RIVET	CR3213-6-6
2	9	601.2364	RIVET	CR3213-4-8	
2	8	647.9019	HINGE		
	2	7	647.9018	DOUBLER	
1	6	647.9414	LOWER DEFLECTOR LONG TIP		
1	5	647.9413	DEFLECTOR, LOWER HALF		
1	4	647.9412	DEFLECTOR, UPPER HALF		
1	3	647.9501	QUICK RELEASE PIN ASSY		
	2	647.9411	UPPER DEFLECTOR		
	1	647.9410	LOWER DEFLECTOR		
			647.9402	LOWER DEFLECTOR LONG ASSY	
			647.9401	DEFLECTOR ASSY	
9402	9401	FIND #	PART #	DESCRIPTION	MAT'L SPEC.

QTY

NEXT ASSY (S)

647.8900

647.9200

PARTS LIST

ORIGINAL DATE: 08-01-10
 DESIGNED BY: P. SCHNEPFER
 DRAWN BY: P. SCHNEPFER
 P. REAGAN, JR. P. BRAVO
 CHECKED BY: P. REAGAN, JR.
 DATE: 08-01-10
 APPROVAL: P. REAGAN, JR.
 08-01-10

UNLESS OTHERWISE SPECIFIED
 DIMENSIONS ARE IN INCHES
 TOLERANCES ARE:
 SPACES DIMENSIONS 101
 SPACES DIMENSIONS 101
 DIMENSIONS 101
 DIMENSIONS 101

APICAL INDUSTRIES

2608 TEMPLE HEIGHTS DR.
 OCEANSIDE, CA. 92056-3512 (760)724-5300

DEFLECTORS

SIN CAT# CODE

B 07M26

SCALE NONE

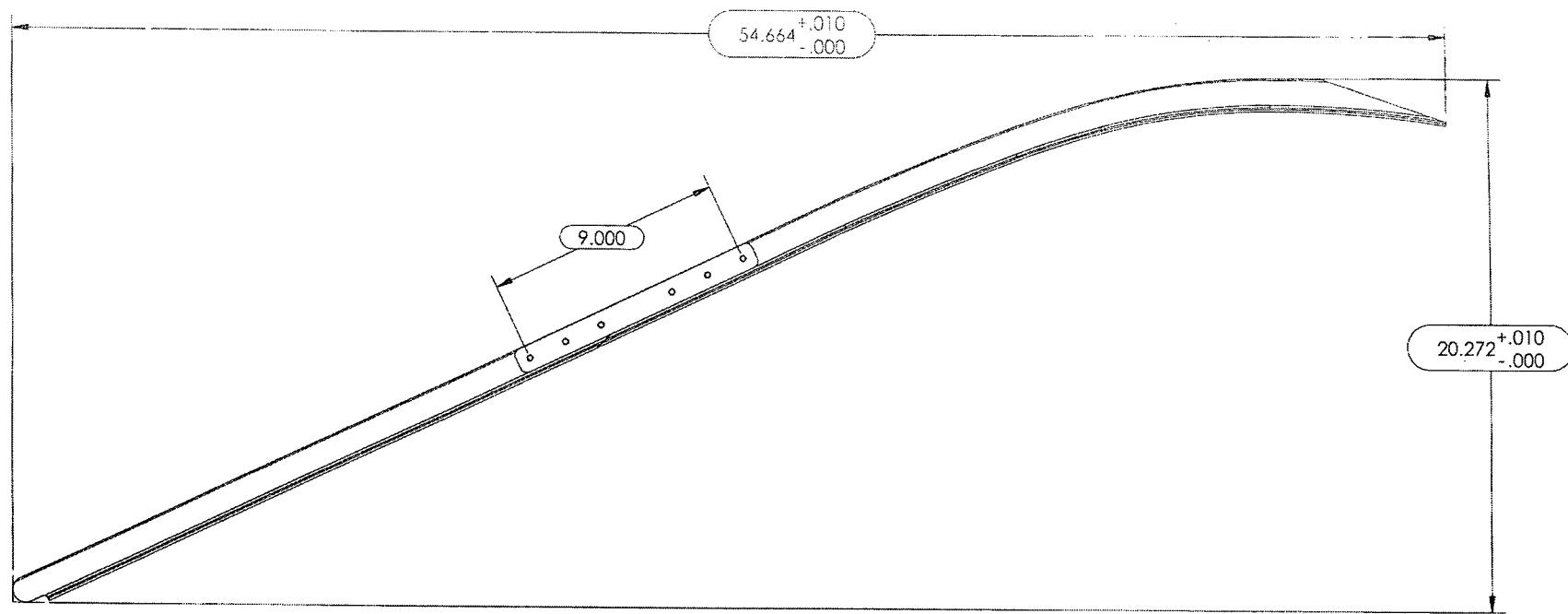
DWG NO

647.9400

SHEET

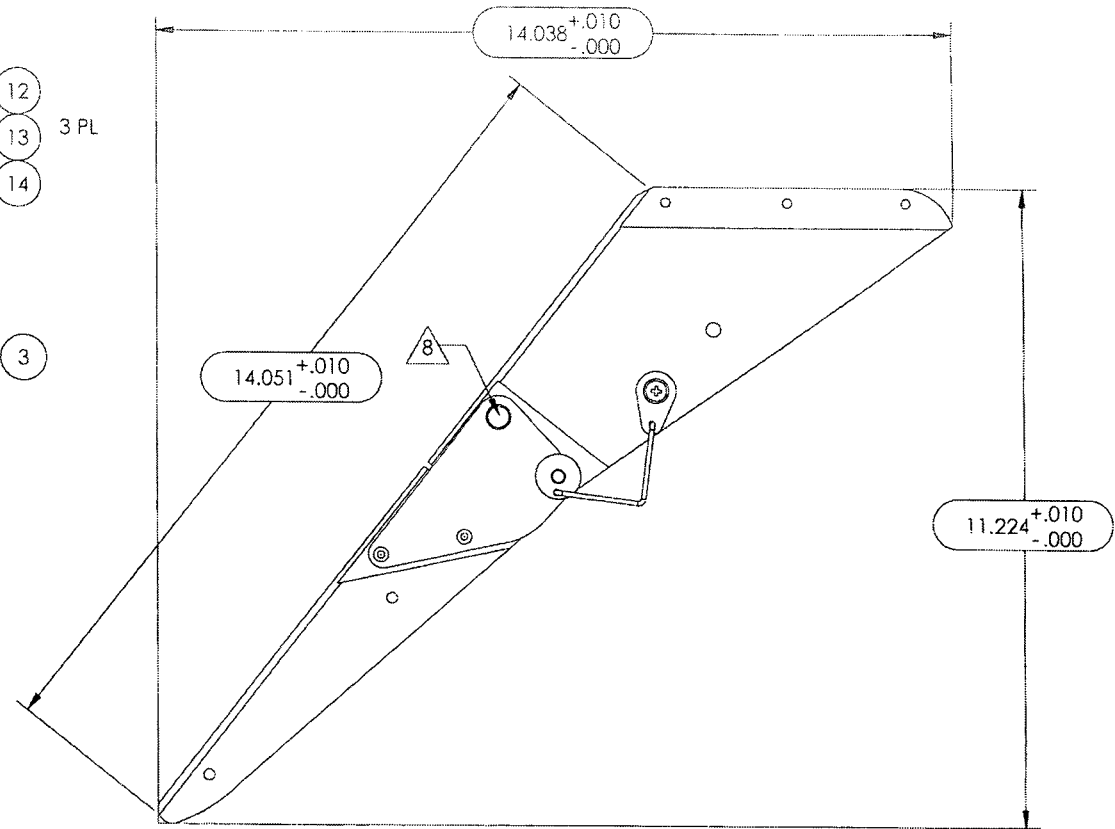
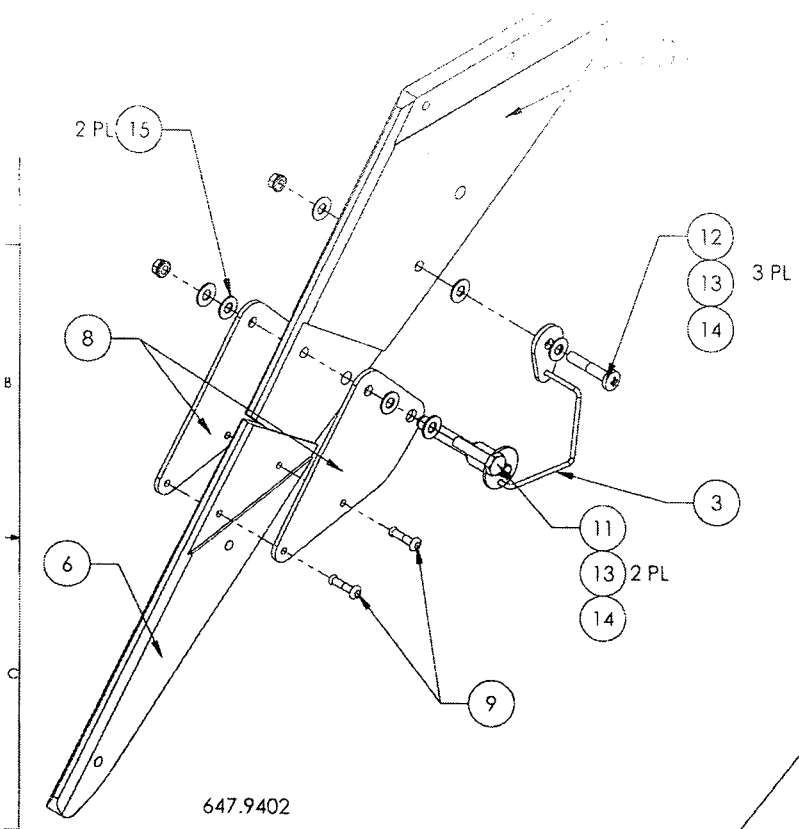
1 OF 4

103415



ORIGINAL DATE INDUSTRY TYPE DRAWN BY 8. REVISION DRAWING APPROVAL P. BRAY DATE CONTRACT NO.		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMAL: .01 2 PLACE DECIMAL: .005 ANGLES: $\pm .5^\circ$		DEFLECTORS	
SEE	CAGE CODE	DWG NO.	REV.
B	07M16	647.9400	A
SCALE: NONE		SHEET 2 OF 9	

103415

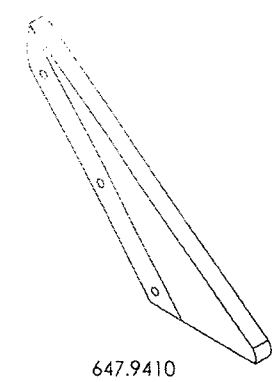
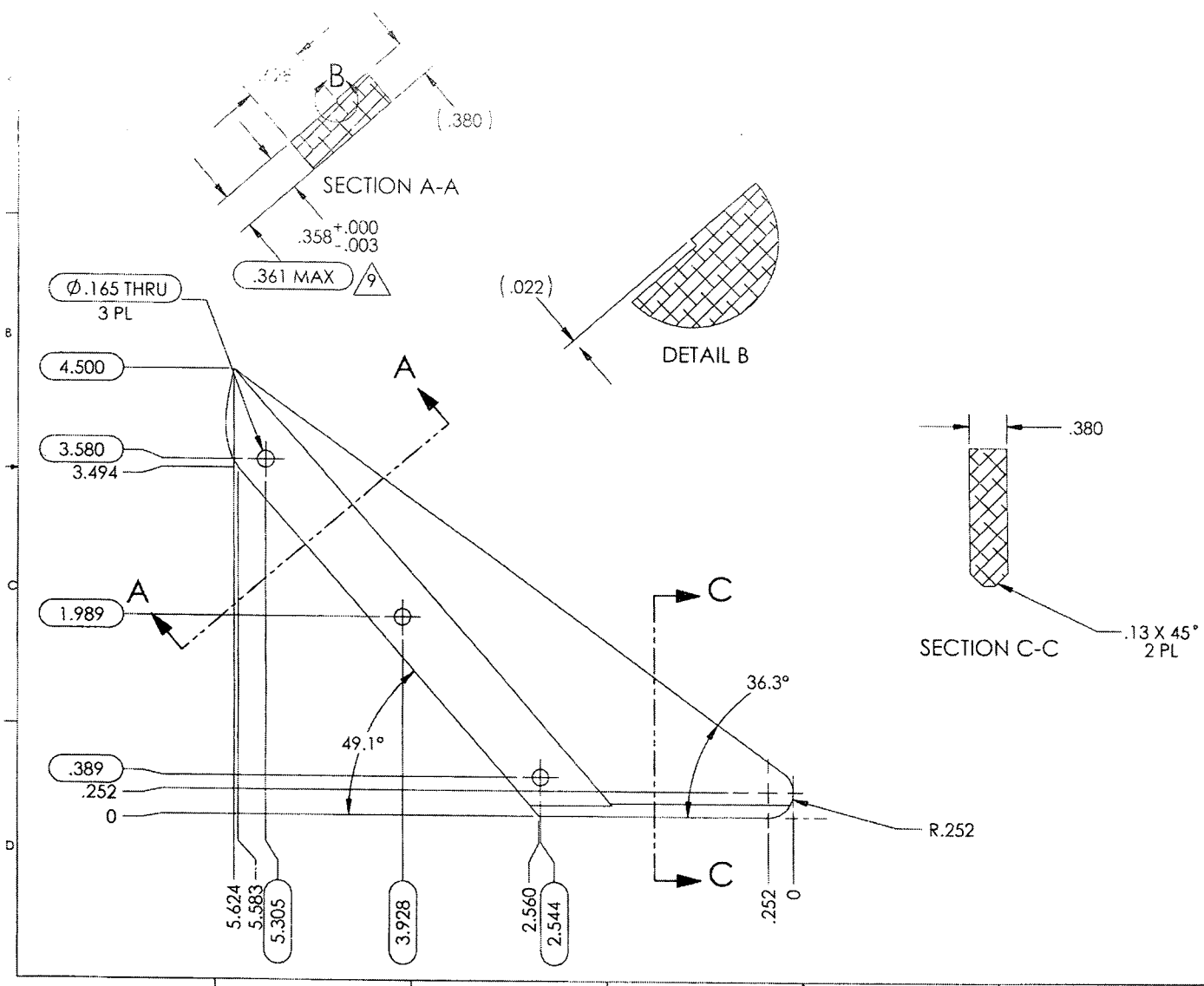


ORIGINAL DATE		DWG. DATE		DWG. NO.	
DRAWN BY		CHECKED BY		REV.	
K. POLANO		P. BRYAN		A	
DRAWING APPROVAL		SCALE		SHEET	
F. BRYAN		NONE		3 OF 9	
CONTRACT NO.		CAGE CODE		REV.	
UNLESS OTHERWISE SPECIFIED		B 07/26		647.9400	
DIMENSIONS ARE IN INCHES		DWG. NO.		A	
TOLERANCES ARE		SCALE		NONE	
2 PLACE DECIMALS ±.01		SHEET		3 OF 9	
3 PLACE DECIMALS ±.005		DWG. NO.		647.9400	
ANGLES ±.5°		SCALE		NONE	

APICAL INDUSTRIES
 2608 TEMPLE HEIGHTS DR.
 OCEANSIDE, CA. 92056-3512 (760)724-5300

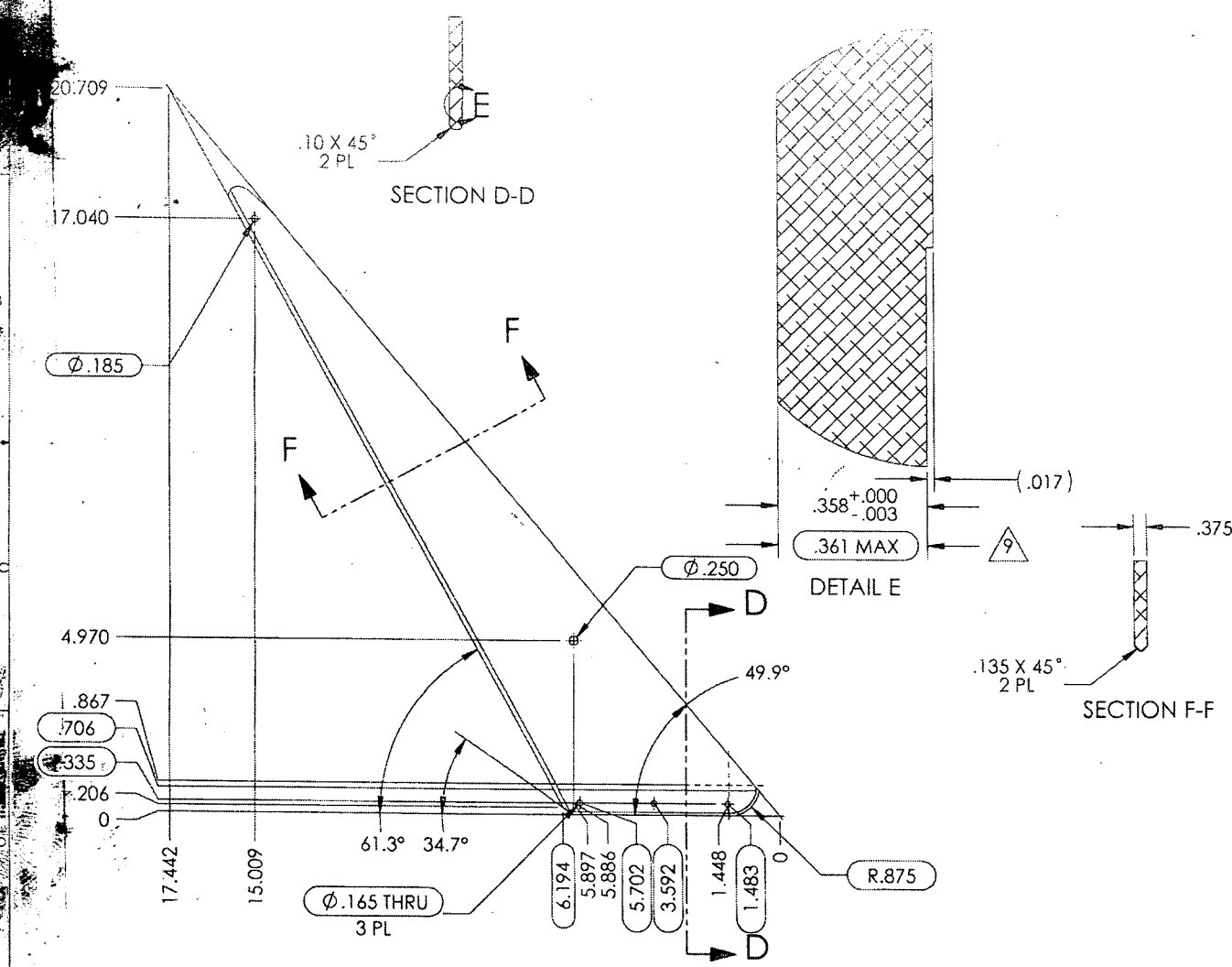
DEFLECTORS

1034/11



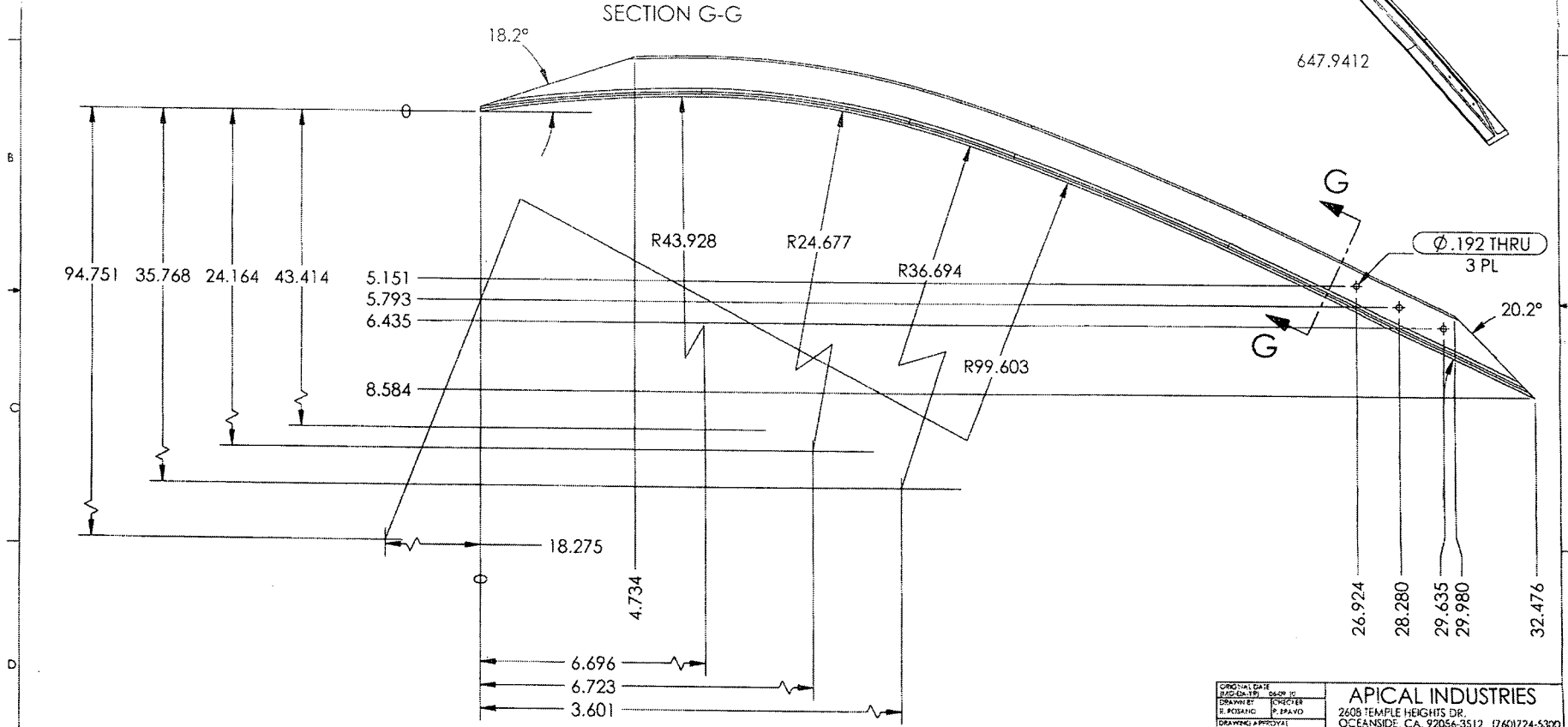
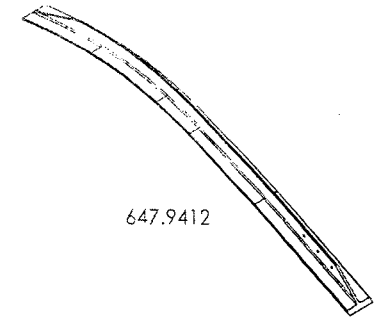
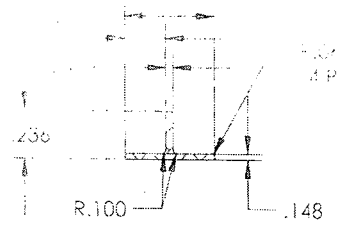
ORIGINAL DATE 3/20/2011		DWG. NO.	
DRAWN BY P. POLAKO	CHECKED BY P. POLAKO	REV.	
DESIGNED BY P. POLAKO	APPROVED BY P. POLAKO	REV.	
CONTRACT NO.		REV.	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DIMENSIONS ARE 2 PLACE DECIMALS ± .01 ANGLES ± .5°		SCALE	SHEET
APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760) 724-5300		647.9400	4 OF 5
DEFLECTORS			

103415

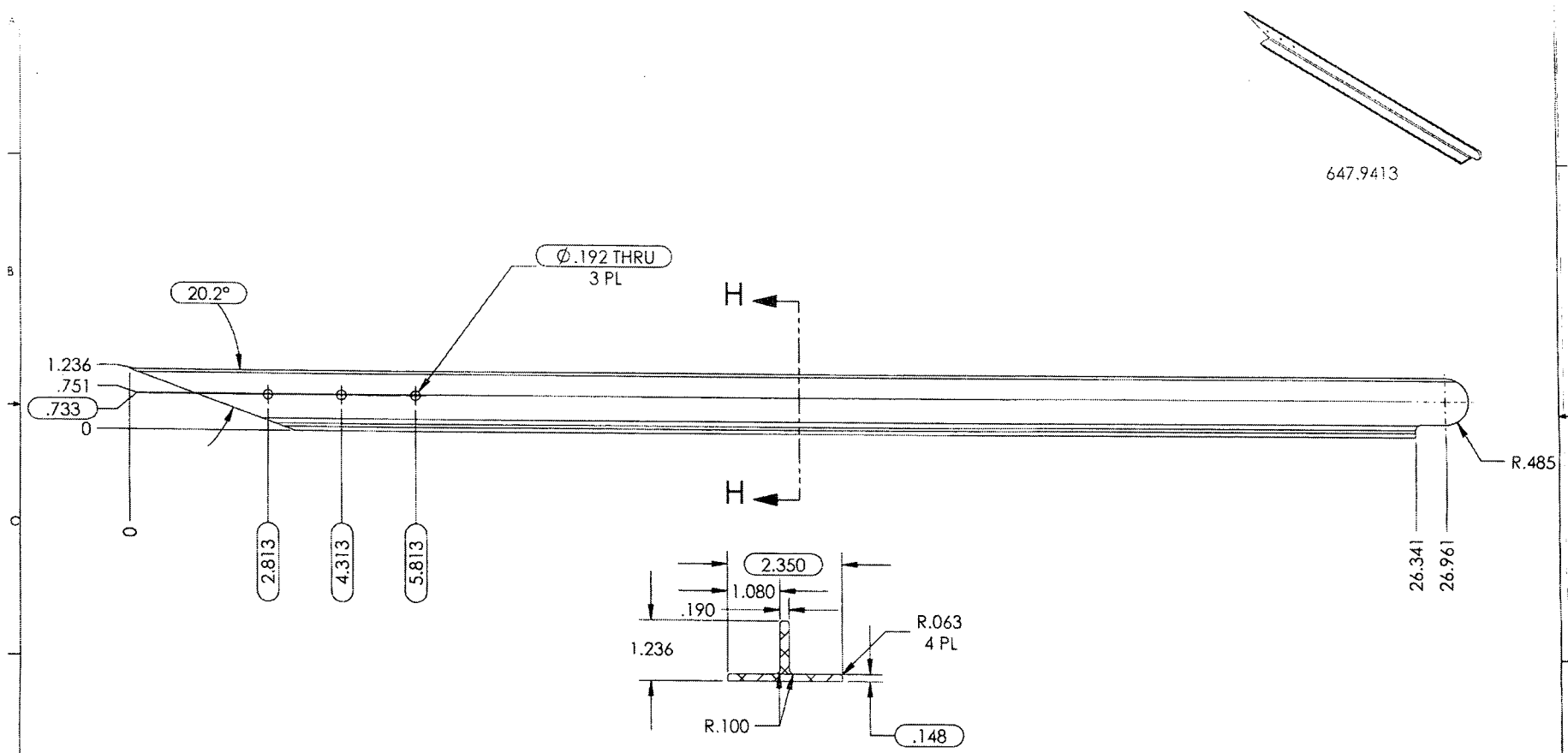


ORIGINAL DATE 10/24/85 DRAWN BY R. F. BROWN CHECKED BY R. BRAVO DRAWING APPROVAL R. BRAVO DATE 10/24/85		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 3 PLACE DECIMALS ±.01 2 PLACE DECIMALS ±.005 ANGLES ±.5°		SHEET CODE B	SHEET NO. 647.9400
SCALE NONE		SHEET 1 OF 1	

103415



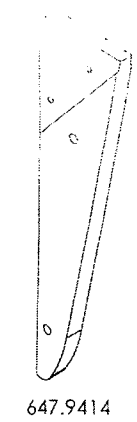
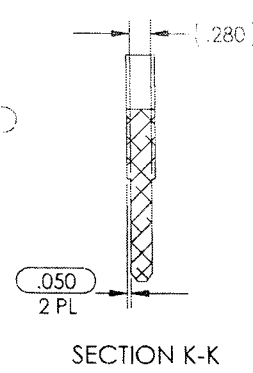
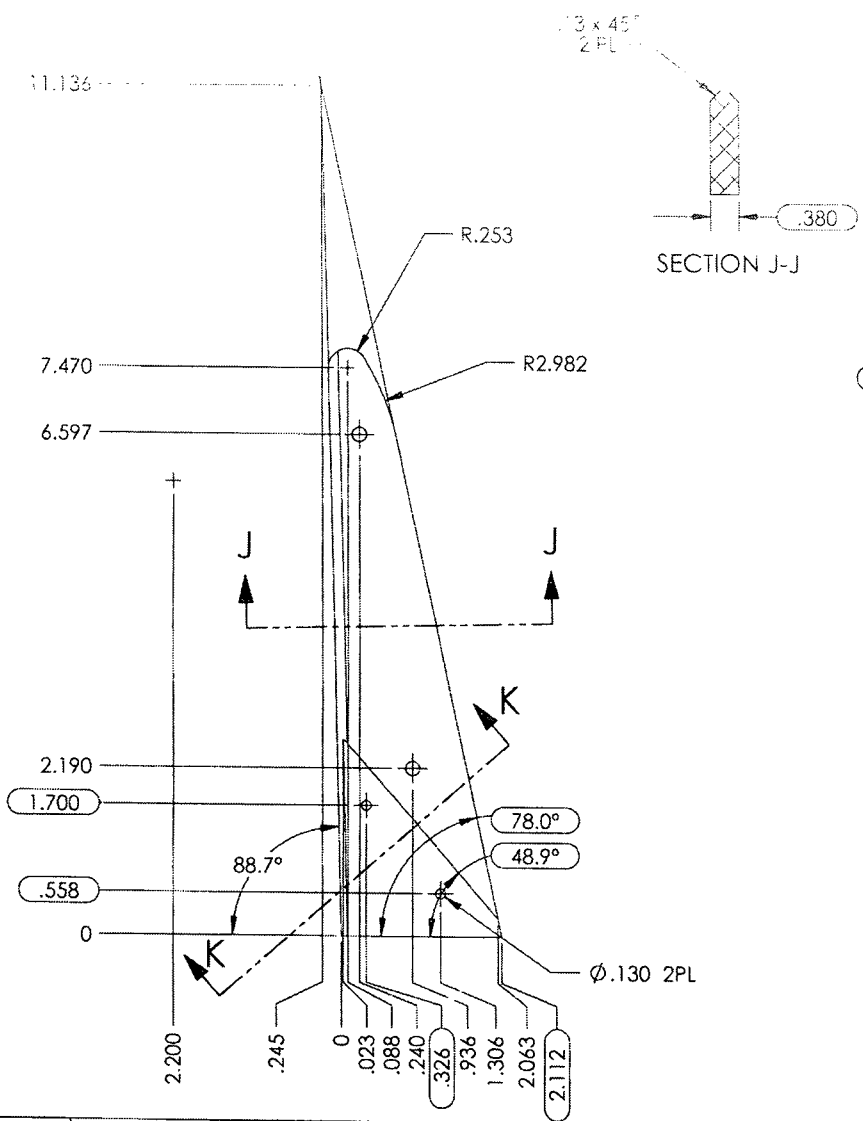
ORIGINAL DATE 10/24/11		DRAWN BY S. KOSIACH		CHECKED BY P. PRAYO	
DRAWING APPROVAL P. PRAYO		<div>APICAL INDUSTRIES</div> <div>2608 TEMPLE HEIGHTS DR.</div> <div>OCEANSIDE, CA. 92056-3512 (760)724-5300</div>			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°					
CONTRACT NO.					
SIZE B	CAGE CODE 07M26	ENG. NO.	647.9400		REV A
SCALE NONE			SHEET 6 OF 9		



SECTION H-H

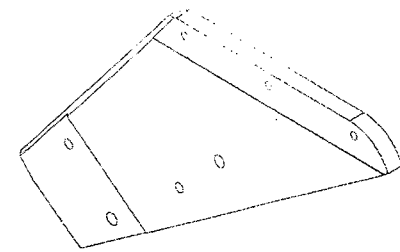
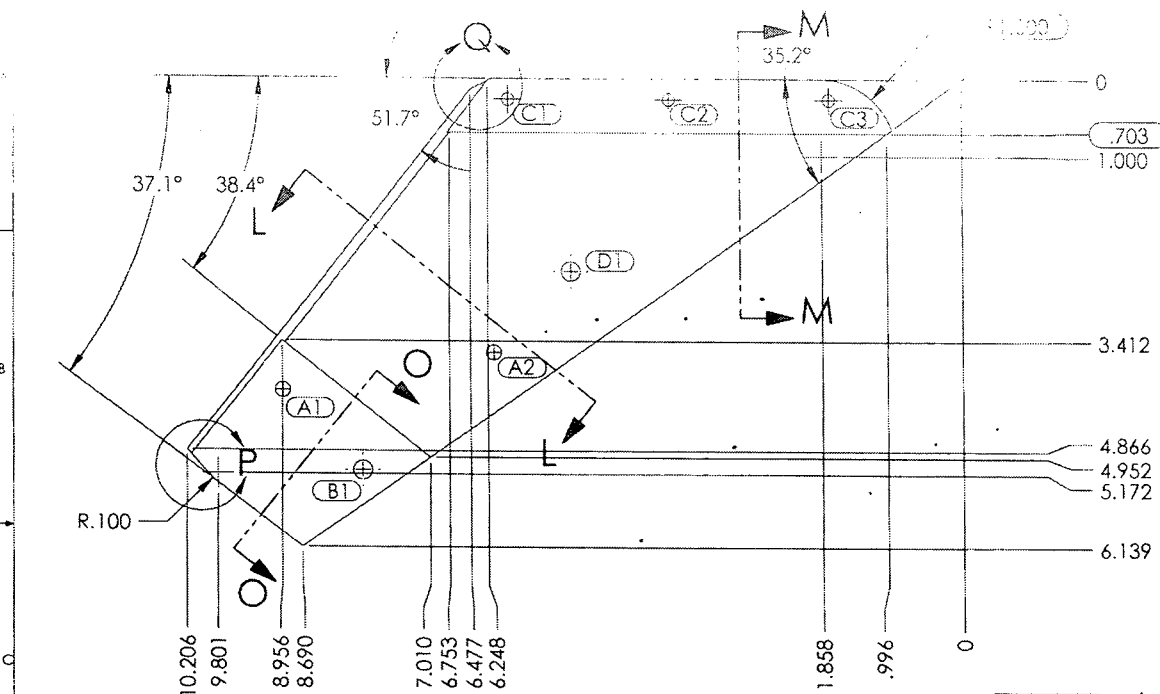
ORIGINAL DATE (W/CDR 10) 04-09-10		APICAL INDUSTRIES	
DRAWN BY R. FOSLUCK		2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
CHECKED BY M. BEAVO		DEFLECTORS	
DESIGNED BY D. L. L. L.		647.9400	
CONTRACT NO.		SHEET 7 OF 9	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1. ALL DIMENSIONS 1:50 2. ALL DIMENSIONS 1:10 3. ALL DIMENSIONS 1:20 4. ALL DIMENSIONS 1:50		SCALE NONE	

103415

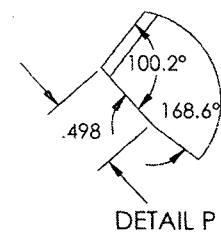


ORIGINAL DATE		APICAL INDUSTRIES	
APPROVAL		2608 TEMPLE HEIGHTS DR.	
DRAWN BY		OCEANSIDE, CA. 92056-3512 (760)724-5300	
P. KOSMANO		P. BRAVO	
DRAWING APPROVAL		DEFLECTORS	
P. BRAVO		REV	
IN CHARGE		A	
CONFIRMATION		647.9400	
WALLS OTHERWISE SPECIFIED		SCALE NONE	
DIMENSIONS ARE IN INCHES		SHEET 8 OF 9	
TOLERANCES ARE:			
1. PLACE DIMENSIONS ± .01			
2. PLACE DIMENSIONS ± .005			
ANGLES ± .5°			

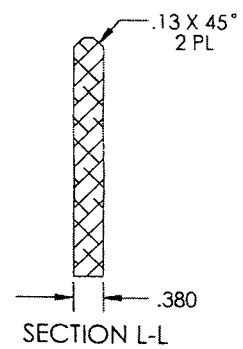
103415



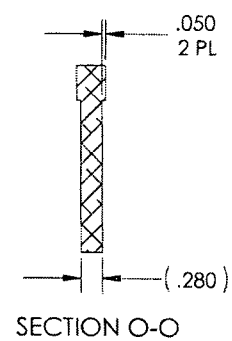
647.9415



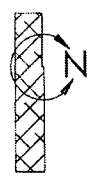
TAG	X LOC	Y LOC	SIZE
A1	-8.949	-4.066	Ø.201
A2	-6.172	-3.562	Ø.201
B1	-7.903	-5.121	Ø.250
C1	-5.978	-.267	Ø.165
C2	-3.863	-.267	Ø.165
C3	-1.758	-.267	Ø.165
D1	-5.159	-2.500	Ø.250



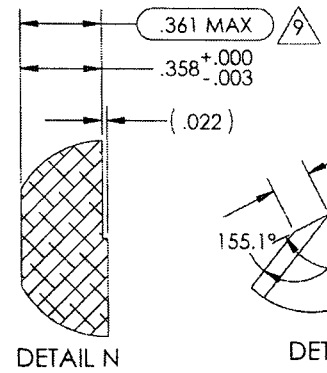
SECTION L-L



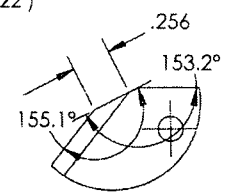
SECTION O-O



SECTION M-M



DETAIL N



DETAIL Q

ORIGINAL DATE: 06/01/90 DRAWN BY: P. ROMANO CHECKED BY: P. ROMANO DESIGNED BY: P. ROMANO APPROVED BY: P. ROMANO CONTRACT NO:	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300
DEFLECTORS	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE .001 2 PLACE DECIMALS .01 3 PLACE DECIMALS .001 ANGLES .5°	SEE PAGE COVER DATE: 07/92 SCALE: NONE
	REV: A 647.9400 SHEET 9 OF 9

DART AEROSPACE LTD		Work Order:
Description: UPPER DEFLECTOR		Part Number: 647 9411
Inspection Dwg: 6479400 Rev: A		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
.375	$\pm .005$	.380	—		Vern	ML-06
.135 X 45°	$\pm .005 \times \pm 1/2^\circ$	.137 X 45°	—		"	
.358	$\begin{smallmatrix} +.000 \\ -.003 \end{smallmatrix}$	.357	—		Micro	ML-01
Ø.1165	$\begin{smallmatrix} +.005 \\ -.001 \end{smallmatrix}$	Ø.1165	—		Vern	ML-06
Ø.250	$\begin{smallmatrix} +.005 \\ -.001 \end{smallmatrix}$	Ø.250	—		"	
Ø.185	$\begin{smallmatrix} +.005 \\ -.001 \end{smallmatrix}$	Ø.185	—		"	
2.483	$\pm .005$				H-G	310016
3.592	$\pm .005$					
5.702	$\pm .005$					
6.197	$\pm .005$					
.335	$\pm .005$	.336	—			
.706	$\pm .005$	.706	—		Vern	ML-01
17.040	$\pm .005$	17.039	—		H-G	310016
49.9°	$\pm 1/2^\circ$	49.9°	—		C-Square	
61.3°	$\pm 1/2^\circ$	61.3°	—			
10 X 45°	$\pm .010 \times \pm 1/2^\circ$	.100 X 45°	—		Vern	ML-06

Measured by: <i>aml</i>	Audited by: <i>[Signature]</i>	Preliminary Approval:
Date: 13/08/19	Date: 13/08 13/08/19	Date:

Rev	Date	Change	Revised by	Approved
E	10.04.14	Added preliminary approval	KJ	

10.04.15

Jean-Luc Menard

From: Pablo Bravo
Sent: August-21-13 10:28 AM
To: Jean-Luc Menard
Subject: RE: deviation?

JL,
I'm good with the deviation. It will work.

Pablo

From: Jean-Luc Menard
Sent: Wednesday, August 21, 2013 4:41 AM
To: Pablo Bravo
Subject: RE: deviation?

Hi Pablo,
Dry fitted the part and it fits snug, I failed to mention that the part is under tol by .001" for 1.2" out of the the total length (aprox 6")
JL

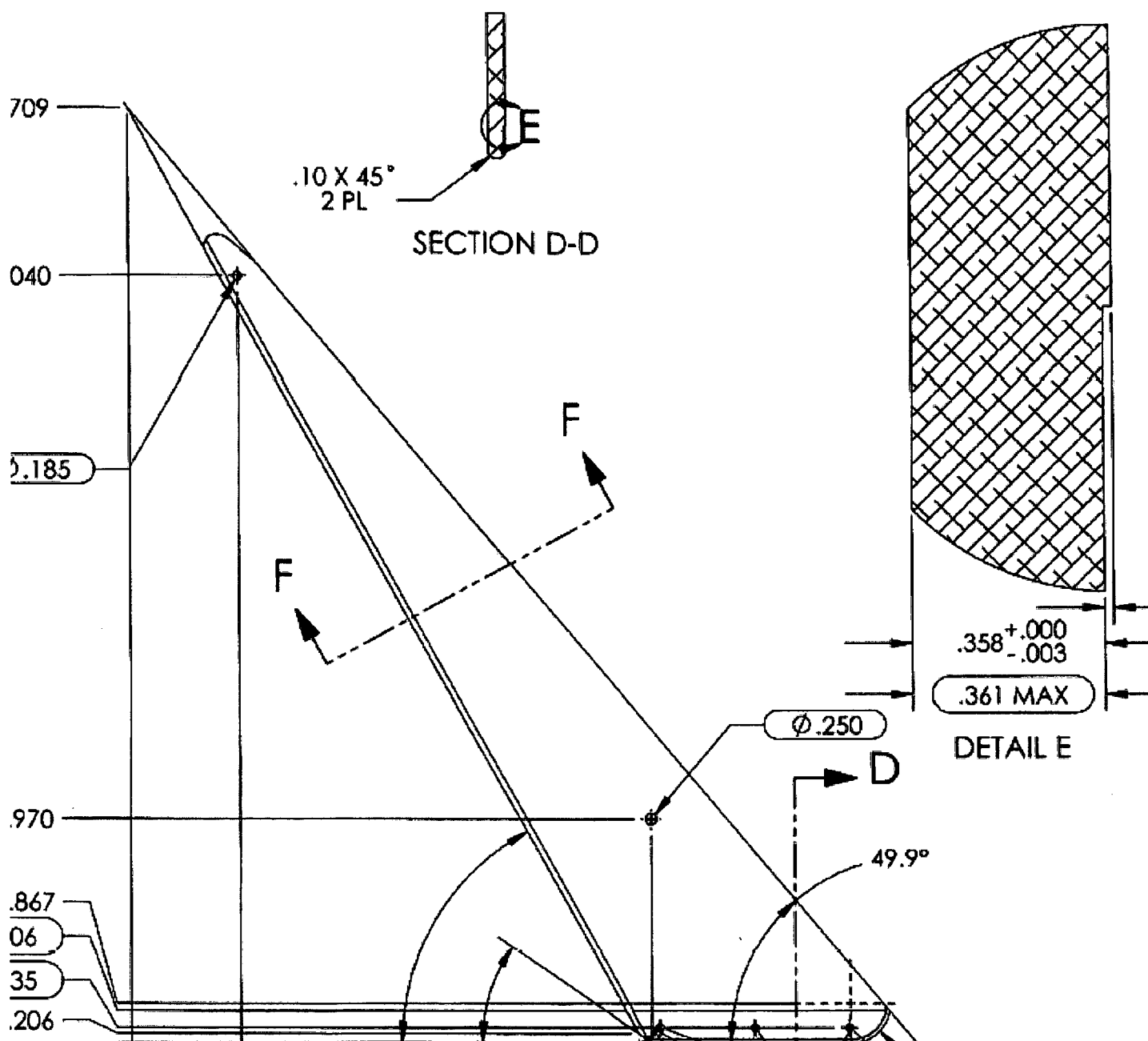
From: Pablo Bravo
Sent: August-20-13 4:52 PM
To: Jean-Luc Menard
Subject: RE: deviation?

JL,
Can you please verify that it fits without too much slop into the cutter subassembly assuming buildup for paint? I think we should be okay, but we're trying to limit the amount of "wiggling" that happens with the assembly.

Pablo

From: Jean-Luc Menard
Sent: Tuesday, August 20, 2013 10:46 AM
To: Pablo Bravo
Subject: deviation?

Hi Pablo,
Sorry to bother you again,.358" dimension is measuring .3535-.354".
Is this acceptable?
Let me know,
JL



Jean-Luc Ménard
 Production Engineering Supervisor

DART AEROSPACE
 T 1 613 632-5200 > 227
 F 1 613 632-5246
 1 800 556- 4166
www.dartaerospace.com



A.T.G. Industries Inc.
731, rue Industrielle Rd.
PLATING DEPARTMENT
Rockland, On K4K 1T2
Canada
Ph: (613) 446-4544
Fax: (613) 446-4556

Pack List

Number: 62618

Date: 12-Sep-13

To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ship To

DART AEROSPACE LTD
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
Canada

Ph: 613-632-5200

Fax: 613-632-1185

Ph: 613-632-5200

Fax: 613-632-1185

Terms

Ship Via

Quantity

Description

Rev:

1
lot

Part: ASST

5 PCS 646.2910
10 PCS 646.3210
40 PCS 647.1713
10 PCS 647.9313
20 PCS 647.9410
50 PCS 647.9411
4 PCS 647.9412
10 PCS 647.9413

HARD ANODIZE BLACK
MIL-A-8625 TYPE II CLASS 2

PRIME MIL-P-23377J TYPE I CLASS N

Job: 20130567

PO: 21052

Line:

Certificate of Conformance

A.T.G. Industries certifies that all items in this shipment are in conformance
with all requirements, specifications and drawings referenced in the purchase order.

ISO 9001 : 2008 REGISTERED
ATG SALES-2010 TERMS APPLY

DATE: 12/9/13

CERTIFIED SIGNATURE: 

RECEIVER SIGNATURE: _____